CODE No. 0816865
Rev. 2 (7/21)

MCR 4004, MCR 4014, MCR 8002, MCR 8012 CONTROLLERS INSTALLATION AND PROGRAMING INSTRUCTIONS

MCR 4004, MCR 4014, MCR 8002, MCR 8012 CONTROLLERS INSTALLATION AND PROGRAMING INSTRUCTIONS

Installation of the PWT MCR 4004, MCR 4014, MCR 8002, MCR 8012 Series Controller incorporates the latest advances in microprocessor technology to provide maximum control of your plumbing system. PWT patented sensing and metering products can be programmed to do just about anything you require, when you require it, including the ability to Delay and Lock-Out fixture activation. PWT products control showers, water closets, lavatories and combination fixtures and help maintain operation of ON/OFF/DELAY. These modular, flexible systems for new constructions, retrofit or expansion applications have few moving parts, no mechanical metering devices, and operate on low voltage to ensure safety and reliability. The following instructions will serve as a guide when installing the MCR 4000 and MCR 8000 Series Controllers. As always, good safety practices and care are recommended when installing your new controller.

LIMITED WARRANTY

Unless otherwise noted, Sloan Valve Company warrants its products, manufactured and sold for commercial or industrial uses, to be free from defects of material and workmanship for a period of three (3) years (one year for SF faucets, special finish and PWT electronics and 30 days on PWT software) from the date of first purchase. During this period, Sloan Valve Company will, at its option, repair, replace, or refund the purchase price of any produce which fails to conform with this warranty under normal use and service. This shall be the sole and exclusive remedy under this warranty. Products must be returned to Sloan Valve Company, at customer's cost. No claims will be be allowed for labor, transportation or other costs. This warranty extends only to persons or organizations that purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

Prior to Installation

PRIOR TO INSTALLATION

Before you install the MCR series controller, be sure the items listed below are installed.

• 24 VAC step down transformer • Push buttons • Flushometer • Lavatory/Shower solenoids

IMPORTANT

- **ALL PLUMBING SHOULD BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.**
- **WATER SUPPLY LINES MUST BE SIZED TO PROVIDE AN ADEQUATE VOLUME OF WATER FOR EACH FIXTURE.**
- **FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.**
- **ALL ELECTRICAL WIRING IS TO BE INSTALLED IN ACCORDANCE WITH NATIONAL/LOCAL CODES AND REGULATIONS.**

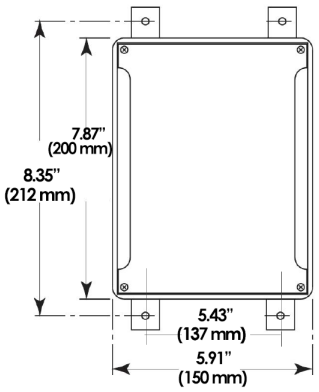




1. Mount Controller

1. Loosen the polycarbonate screws.
2. Open polycarbonate cover in front of controller.
3. Install controller so that all cables enter from the bottom. Controller must be located within 200 ft. from furthest push button and within 200 ft. of power supply transformer.
4. Mount controller to wall using mounting screws and plastic anchors (supplied by others).

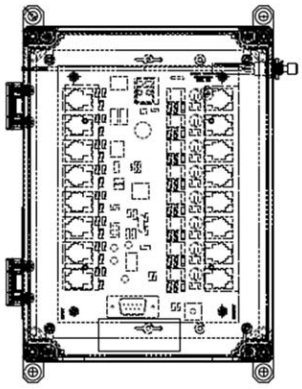
NOTE: Extension cables are available as an option from PWT to allow for installing the controller up to 35 lt from furthest push button.



2. Connect Power Supply

1. Make sure power is off to 24 VAC transformer.
2. Run 18-gauge wire from secondary side (24 VAC output) of transformer to terminal block inside controller.
3. Turn power on and look for power indicator to illuminate.
4. Turn power off until pushbuttons and solenoids are installed.

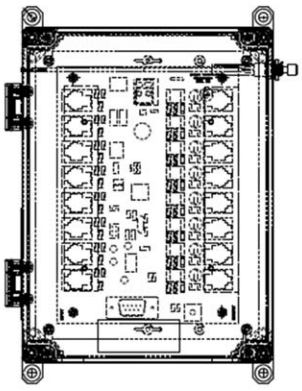
IMPORTANT: Be sure that wire is completely inserted into terminal and that no strands are crossing from one side to the other.



3. Connect Push Button and Solenoid

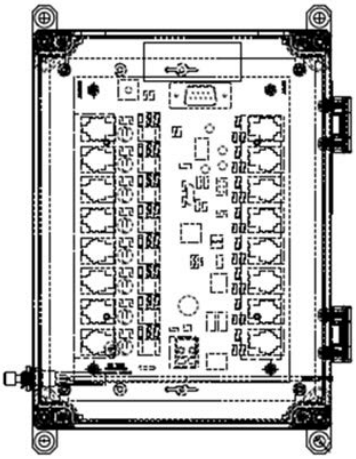
1. Confirm power is off.
2. Plug RJ-11 connectors from push buttons into appropriate input connections in controller. Refer to Operating Chart sheet for input/output designations.
3. Plug RJ-11 connectors from Flushometers, lavatories and/or shower solenoids into appropriate output connections in controller. Refer to Operating Chart sheet for input/output designations.
4. Power up controller.

IMPORTANT: Make sure that all pushbuttons are connected to the input and solenoids connected to output. Improper connections will result in failure of controller and/or push buttons and solenoids and will require replacement.



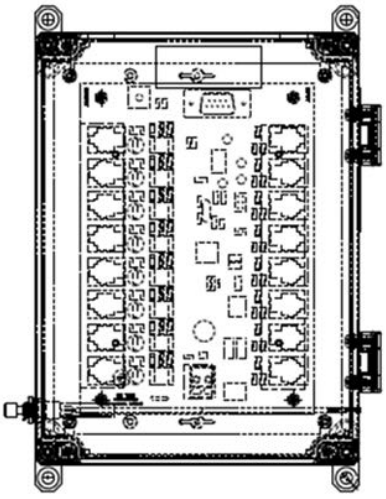
4. Adjusting the Potentiometer

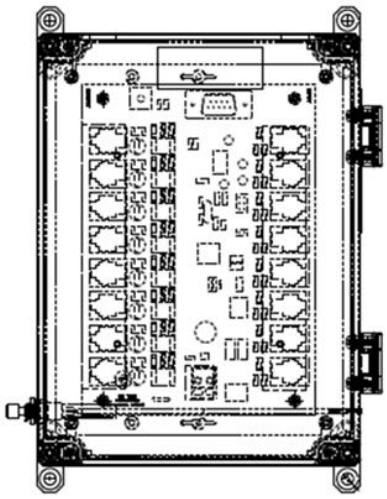
1. Turn on power to controller.
2. Wait for LED 17 and LED 18 to stop flashing.
3. Turn potentiometer to maximum counterclockwise setting. This is zero position.
4. Slowly turn potentiometer clockwise. Count the number of times that LED 18 flashes. Each flash relates to a time increment that increases either a runtime or lockout time. When adjusting runtime, each flash equals 30-seconds. When adjusting a lockout, each flash equals 15-minutes.
5. Repeat steps 2-4 until LED flashes for appropriate timing



5. Close Polycarbonite Cover and Remove

1. Close the polycarbonate cover.
2. Tighten two cover screws



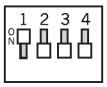


6. Application Setting for MCR 4004 and MCR 4014 Controller

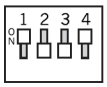
MCR 4004 & MCR 4014 controllers can be configured for different applications including all closet, all shower, all lavatories and combination by setting an on-board 4-position dip switch.

All Closets: Used to control up to 4 water closets.*

2 in 5 min.

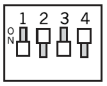


3 in 15 min.



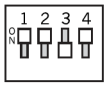
All Showers: Used to control up to 4 single runtime showers.

All Showers



All Lavatories: Used to control up to 4 single runtime water lavatories.

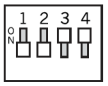
All Lavatories



Combination: Used to control combination fixtures.

1. I/O-1 used to control a hot water.
2. I/O-2 used to control a cold water.

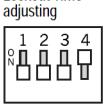
Combination
I/O-1 Hot water and
I/O-2 Cold water
"Run Time" adjusting



3. I/O-3 used to control a closet.**

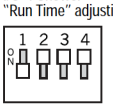
I/O-3 Closet
w/Elec. Flushometer

Lockout Time
adjusting



4. I/O-4 used to control a shower

I/O-4 Shower
"Run Time" adjusting



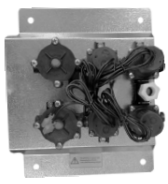
* On water closets only, first dip switch in ON position activates random delay flushing. In OFF position, random delay flushing is deactivated.
Note: the dip switches are factory set in the OFF position which equals an all closet (4) function – 2 flushes in 5 minutes with 1 hour lockout and no random delay.

** Standard setting: via dip switch #4 in OFF position activates 2 flushes in 5 minutes with a 60 second lockout for a third activation attempt within the 5 minute time frame.
Option: via dip switch #4 in ON position activates 3 flushes in 15 minutes with a 60 minute lockout time.

PWT TROUBLESHOOTING GUIDE — NON-COMMUNICATING SYSTEM

1. **PROBLEM: No water is delivered to any fixture when the push buttons are pressed.**
   INDICATOR: No LED lights are illuminated.
   CAUSE: No electricity is being supplied to the controller.
   SOLUTION: Ensure that the main power is turned on. Check breaker and transformers. Make sure transformer is supplying 24 VAC (Volts AC). If no voltage is detected, replace transformer.
   INDICATOR: Red LED lights are flashing.
   CAUSE: Controller is in "LOCK-OUT" mode.
   SOLUTION: Press reset button on face plate or disconnect power to controller for 10-seconds. LED light will stop flashing.
   INDICATOR: LED light on input does not illuminate when button is activated.
   CAUSE: Push button is defective, RJ-11 jack is not in correctly, or reed switch magnets are fouled (MCR 60-A button).
   SOLUTION: Unplug RJ-11 Jack then reinstall. Activate push button and check for LED to illuminate.If this does not fix the problem, move a working input line to the problem terminal then activate button. If the LED light illuminates, you know the original push button is damaged or defective. Replace with new button. If the button is an MCR 60-A, replace the magnets inside the push button assembly (MCR 22-A) or the reed switch (MCR 18-A).
2. **PROBLEM: MCR-250-A unit false triggers (activates by itself).**
   INDICATOR: Input LED light stays on or shows a constant dim light.
   SOLUTION: The reed switch is too close to the push rod. Turn off the water supply to the valve. Remove reed switch from valve body. Remove B-39 Seal. Push reed switch sensor back into the retaining spring away from the push rod. Reassemble. Check LED light on input. If LED is still illuminated, repeat action until LED light only illuminates when button is activated.
3. **PROBLEM: Input LED illuminates when button is pressed but valve does not activate.**
   CAUSE: Control board output jack is not properly connected or is defective.
   SOLUTION: Disconnect RJ-11 plug from the jack and then reconnect. If this does not fix the problem, plug a working valves' output RJ-11 plug into problem output jack. Cycle the valve using alternate push button.
   INDICATOR: NO LED light at output jack. Damaged or defective output jack on the board. Replace board.
   CAUSE: Wiring pigtail to valve damaged or defective.
   SOLUTION: Replace pigtail or for 603-ESM valve, replace MCR 1001-A solenoid operator.
4. **PROBLEM: Flush valve does not function after output LED illuminates.**
   INDICATOR: Valve makes a "CLICKING" sound but does not flush.
   CAUSE: No water is being supplied to valve.
   SOLUTION: Make sure the water supply is turned on at the control stop. Check to see if any ball or gate valves have been turned off up stream of the control stop.
   CAUSE: The EL-163-A Solenoid shaft assembly is fouled or jammed.
   SOLUTION: Turn the power off to the valve (Failure to do so could result in damage to the solenoid coil). Remove the EL-166 nut from the solenoid operator. Use a spanner wrench or pliers to remove the EL-163-A solenoid shaft assembly from the valve. Clean and/or replace as necessary. Be sure to replace the plunger spring when reassembling solenoid shaft assembly.
   CAUSE: The EL-128-A actuator assembly is clogged or needs to be replaced.
   SOLUTION: Shut off water to the valve. Remove the solenoid assembly. Take out and replace/or clean the EL-128-A cartridge assembly. Make sure the PISTON RING is on the PLUNGER PISTON.
5. **PROBLEM: Little or no water is delivered to bubbler or shower head after output LED has activated.**
   CAUSE: Water supply stops are closed or partially open.
   SOLUTION: Open stops.
   CAUSE: Debris is clogging solenoid filter.
   SOLUTION: Shut off water supply. Remove, clean, and reinstall solenoid filter.
   CAUSE: Solenoid is worn or faulty.
   SOLUTION: Turn off water supply. For MCR 139-A, Rebuild with ETF-1009-A solenoid repair kit, or replace MCR 139-A. For MCR 194-A, Rebuild with or replace MCR 194-A.
   CAUSE: Flow restrictor in bubbler or shower head is clogged with debris.
   SOLUTION: BUBBLER- Remove compression nut from 3/8 O.D. Nylon tubing connecting to bubbler. Remove and Clean flow restrictor.
   SHOWER - Remove shower. Remove and Clean flow restrictor.
6. **PROBLEM: Bubbler or shower does not stop delivering water or continues to drip after programmed run time has lapsed.**
   INDICATOR: Output LED does not turn off after programmed run time.
   CAUSE: Short or moisture at output connection.
   SOLUTION: Push the reset button on the face plate. If output LED light turns off reactivate the valve. If LED remains on remove RJ-11 connection. Clean output jack and plug with electrical contact cleaner. Reinstall.
   CAUSE: Debris is clogging solenoid.
   SOLUTION: Turn off water supply. For MCR 139-A, Rebuild with ETF-1009-A solenoid repair kit, or replace MCR 139-A. For MCR 194-A, Rebuild with or replace MCR 194-A.
7. **PROBLEM: Flush valve runs non-stop (run on) or has a slow leak.**
   CAUSE: Diaphragm by pass hole is clogged and/or filter ring needs to be cleaned.
   SOLUTION: Shut off water at control stop. Remove top cap and inside cover. Remove and clean diaphragm assembly. Re-install. In reverse order.
   CAUSE: Valve body seat is nicked or defective.
   SOLUTION: Replace valve body.
8. **PROBLEM: Toilet flushes without activation.**
   INDICATOR: Button is not pressed and solenoid does not fire.
   CAUSE: Crack in the inside cap cover (A-71).
   SOLUTION: Shut off water to the valve. Remove top cap and inside cover. Replace inside cover (A-71). Reassemble.

PWT by SLOAN.





SLOAN • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131
Phone: 1-800-982-5839 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 • sloan.com